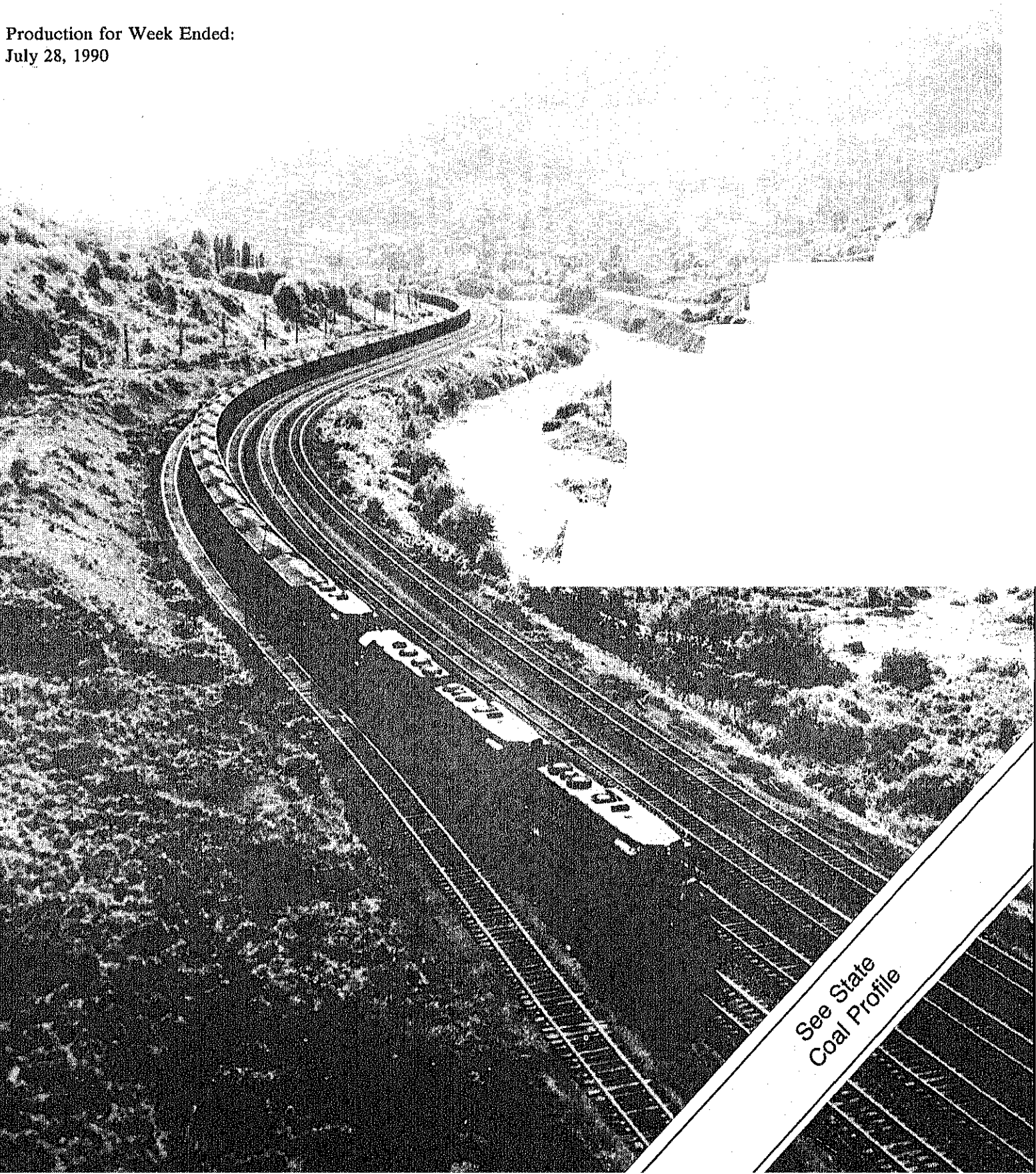


Weekly Coal Production

Production for Week Ended:
July 28, 1990



See State
Coal Profile

Preface

The *Weekly Coal Production (WCP)* provides weekly estimates of U.S. coal production by State. Supplementary data are usually published monthly in two supplements: the Coal Exports and Imports Supplement and the Domestic Market Supplement. The Coal Exports and Imports Supplement contains detailed monthly data on U.S. coal and coke exports and imports. The Domestic Market Supplement contains detailed monthly electric utility coal statistics, by Census Division and State, for generation, consumption, stocks, receipts, sulfur content, prices, and the origins and destination of coal shipments. This supplement also contains summary-level, monthly data for all coal-consuming sectors on a quarterly basis.

Preliminary coal production data are published quarterly, based on production data collected using Form EIA-6, "Coal Distribution Report." The coal production estimation error for a quarter at the national level (i.e., the difference between the sum of the weekly estimates for a quarter and the quarterly EIA-6 preliminary data) ranges from 1 percent to 4 percent.

Final coal production data are published annually, based on the EIA-7A coal production survey. The

revision error for a quarter at the national level (i.e., the difference between the EIA-6 preliminary data and the EIA-7A final data) ranges from 0.02 percent to 0.08 percent.

This publication is prepared by the Coal Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration (EIA) to fulfill its data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of 1974 (P.L. 93-275) as amended. *Weekly Coal Production* is intended for use by industry, press, State and local governments, and consumers. Other publications that may be of interest are the quarterly *Coal Distribution Report*, the *Quarterly Coal Report*, *Coal Production 1988*, and *Coal Data: A Reference*.

This publication was prepared by Wayne M. Watson and Michelle D. Bowles under the direction of Mary K. Paull and Noel C. Balthasar, Chief, Data Systems Branch. Specific information about the *State Coal Profile: Kentucky* may be obtained from Eugene R. Slatick at 202/254-5384. Questions on energy statistics should be directed to the National Energy Information Center (NEIC) at 202/586-8800.

Photo Credit:

Mark Energy Pit, White Plains, KY
State Coal Profile: Kentucky

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Summary

U.S. coal production in the week ended July 28, 1990, as estimated by the Energy Information Administration, totaled 21 million short tons, virtually the same as in the previous week, but 9 percent more than in

the comparable week in 1989. Production East of the Mississippi River totaled 12 million short tons, and production West of the Mississippi River totaled 8 million short tons.

Figure 1. Coal Production

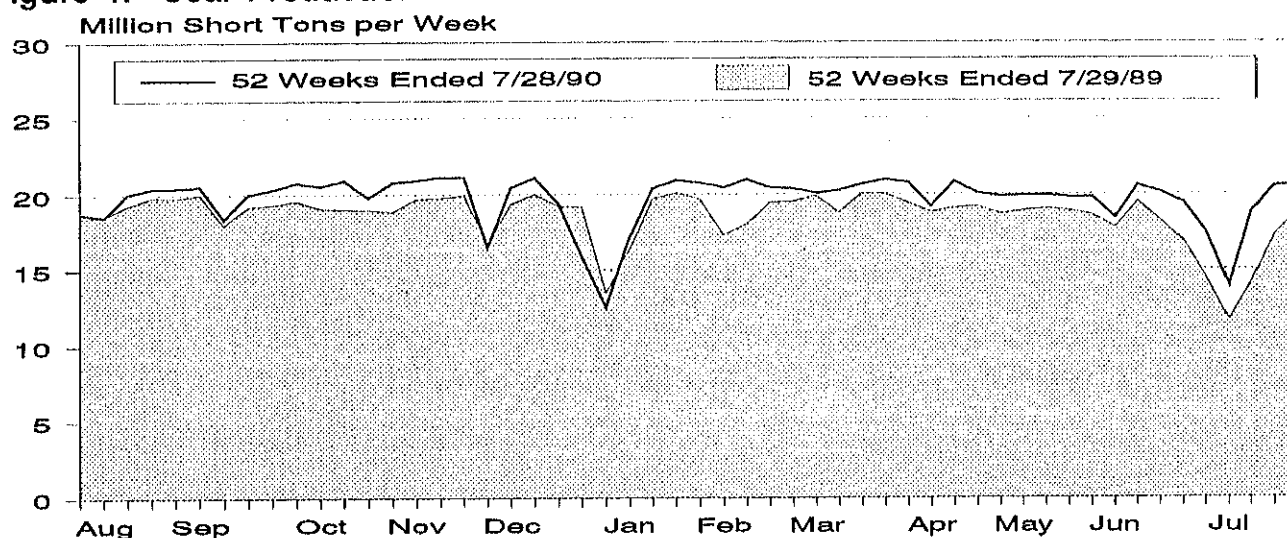


Table 1. Coal Production

	Week Ended			52 Weeks Ended		Percent Change
Production and Carloadings	07/28/90	07/21/90	07/29/89	07/28/90	07/29/89	
Production (Thousand Short Tons)						
Bituminous ¹ and Lignite	20,493	20,458	18,723	1,021,095	962,546	6.1
Pennsylvania Anthracite	71	74	61	3,321	3,545	-6.3
U.S. Total	20,564	20,531	18,784	1,024,416	966,091	6.0
Railroad Cars Loaded	132,280	132,052	121,802	6,618,215	6,359,515	

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components due to independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Table 2. Coal Production by State
(Thousand Short Tons)

Region and State	Week Ended		
	07/28/90	07/21/90	07/29/89
Bituminous Coal¹ and Lignite			
East of the Mississippi	12,464	12,610	11,445
Alabama	559	606	497
Illinois	1,055	1,093	1,172
Indiana	948	889	696
Kentucky	3,293	3,300	3,247
Kentucky, Eastern	2,476	2,463	2,409
Kentucky, Western	817	837	838
Maryland	59	59	50
Ohio	705	708	643
Pennsylvania Bituminous	1,288	1,439	1,163
Tennessee	151	149	131
Virginia	1,052	1,037	1,040
West Virginia	3,354	3,330	2,805
West of the Mississippi	8,028	7,848	7,278
Alaska	28	28	23
Arizona	250	250	249
Arkansas	3	3	2
Colorado	409	331	304
Iowa	8	8	8
Kansas	23	23	27
Louisiana	69	57	50
Missouri	61	61	57
Montana	724	742	748
New Mexico	493	290	201
North Dakota	596	611	488
Oklahoma	36	37	40
Texas	1,252	1,251	1,141
Utah	456	392	387
Washington	100	100	85
Wyoming	3,521	3,664	3,469
Bituminous ¹ and Lignite Total	20,493	20,458	18,723
Pennsylvania Anthracite	71	74	61
U.S. Total	20,564	20,531	18,784

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components due to independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

State Coal Profile: Kentucky

Total Area of State:

40,395 square miles

Area Underlain by Coal:

14,600 square miles

Demonstrated Reserve Base of Coal: (January 1, 1989)

30 billion short tons
(6 percent of U.S. total)

First Year of Documented Coal Production:

1828 (328 short tons)

Peak Year of Coal Production:

1987 (165 million short tons)

1989 Coal Production:

159 million short tons
(16 percent of U.S. total)

1988 f.o.b. Average Mine Price:

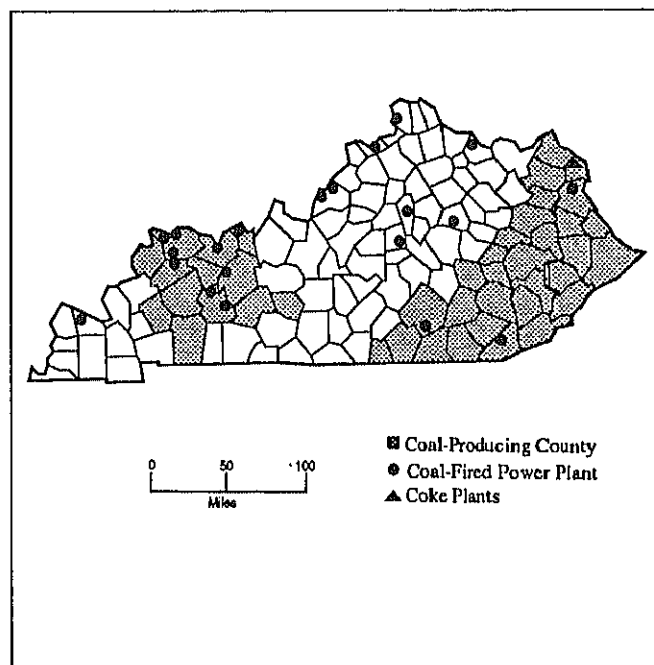
\$26.20 per short ton
(U.S. average=\$22.07)

1989 Coal Consumption:

33 million short tons
(4 percent of U.S. total)

1989 Coal Exports:

13 million short tons
(13 percent of U.S. total)



	<u>Number</u>	<u>Percentage of U.S. Total</u>
Number of Mines (1988)	1,230	32
Underground	738	40
Surface	492	25
Number of Miners (1988) (at mines producing more than 10,000 short tons)	30,559	23
Underground	20,473	24
Surface	10,086	20
Average Quality of Utility Coal Receipts (1989)	<u>Kentucky</u>	<u>U.S. Average</u>
Heat Content (million Btu per short ton)	23.0	20.9
Sulfur Content (percent by weight)	2.7	1.3
Ash Content (percent by weight)	12.5	9.9

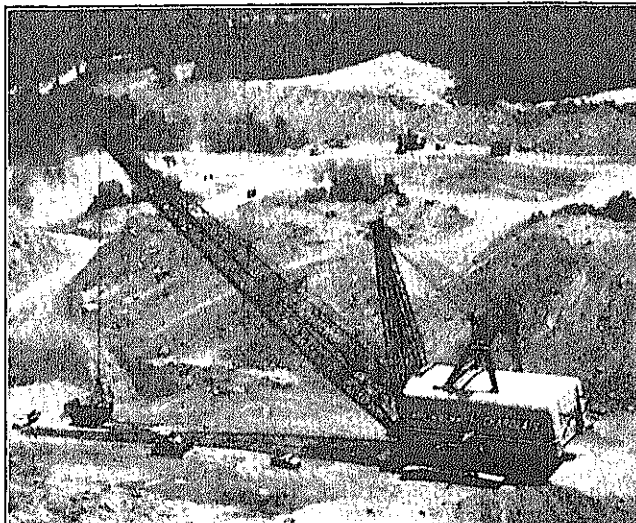
Kentucky is one of the major coal-producing States, with an annual output averaging over 150 million short tons during the 1980's. It was the Nation's leading coal producer until 1988, holding that position over a decade, when Wyoming gained first place. However, Kentucky continues to be foremost based on energy content of coal produced, production of bituminous coal, value of production, number of mines, and number of miners.

Coal is by far the most important mineral commodity produced in Kentucky. The value of the 158 million short tons of coal mined in 1988 was about \$4 billion, which represented about 90 percent of the total value of all minerals produced, including oil and gas. In addition, coal production generated about \$180 million in State severance taxes and nearly \$500,000 in royalties from Federal coal leases.

Kentucky's coal reserve base, the fifth-largest in the Nation, consists entirely of bituminous coal. The State contains two coalfields, one in the east and the other in the west, that are separated by a large geologic uplift called the Cincinnati arch. The eastern field, the larger of the two, is part of the Appalachian coal basin. The western field is a continuation of the Illinois coal basin, which also underlies parts of Illinois and Indiana. Although both coalfields date back to the Pennsylvania geologic period, they are distinct in several ways due to the different geologic conditions that influenced coal formation in each area.

The eastern field contains more than 40 minable beds, ranging from 2 to 4 feet in thickness. Generally, the coal has a heat content of about 26 million Btu per short ton and a sulfur content of 1 to 2 percent by weight. Premium-grade metallurgical coal is present in some areas. By comparison, the western field has less than 20 minable coalbeds, with an average 5 feet in thickness. The heat content of the coal is slightly lower than in the eastern field, the sulfur content is higher, about 3 to 4 percent by weight, which is an environmental shortcoming. Metallurgical coal is found in western Kentucky, but of a low grade. Because of these differences in coal quality, the eastern field has become Kentucky's chief source of coal production and the only area in the State where metallurgical coal is mined. Four coalbeds account for about half of the coal produced in the eastern field: the Hazard No. 4, Hazard No. 5, Lower Elkhorn, and Elkhorn No. 1. In the western field, the No. 9 coalbed is the source of about 50 percent of the coal produced.

Though coal was discovered in Kentucky in the mid-1700's, production was small until the mid-1800's. Some of the early output was used in local furnaces, as a source of heat for salt production, and as a fuel for river steamers and locomotives.



This large dragline, weighing about 500 tons, removes 3,000 cubic yards of overburden per hour from a coalbed in western Kentucky.

The level of coal production rose above 1 million short tons in 1879 and was over 5 million short tons at the turn of the century. Production reached 69 million short tons in 1927 and then dropped to about half that amount during the depression years. Responding to the demands of World War II and the postwar Marshall Plan, the output of coal in Kentucky trended upwards to 84 million short tons in 1947. Later, production declined in the face of competition from petroleum, including the replacement of coal-fired locomotives with diesel-electric engines. Production recovered in the 1960's under the stimulus of a growing market for utility coal. The output rose above 100 million short tons in 1967, increased to a record 165 million short tons in 1987, and was estimated to be 159 million short tons in 1989.

Nearly 60 percent of the coal produced in Kentucky in recent years has been from underground mines, historically the principal source of production. In 1989, six longwall mining systems were in operation, all but one in the eastern coalfield. Surface coal mining, which began in the 1920's, has increased almost steadily since World War II. At times in the 1970's and early 1980's, surface mines accounted for more than half of the State's coal output.

In 1988, more than 1,200 coal mines were operating in Kentucky, the largest number in any State. However, about half of the mines in Kentucky are small, annually producing less than 50,000 short tons each. As a result, the bulk of the coal produced is from the relatively few large mines with an annual output of over 500,000 short tons each. In 1988, these mines represented only 6 percent of the total number of mines, but they supplied nearly half of the State's coal output. About 200 coal preparation plants are in Kentucky, most of them in the eastern coalfield.

The coal mining industry in Kentucky provided employment in 1988 for more than 30,000 persons, the biggest coal-mining labor force in the United States. Employment at underground mines was about twice that at surface mines. Miner productivity per hour in 1988 averaged 2.5 short tons at underground mines and 3.1 short tons at surface mines, both slightly below the average for the East.

Most of the coal produced in Kentucky is shipped to consumers outside the State. About 90 percent is marketed within the United States, virtually all in the East, and the rest is exported. In 1989, about 95 million short tons of the coal mined in Kentucky were shipped to power plants in 23 other States. About 13 million short tons were mined for the export market.

Coal consumption in Kentucky totaled 33 million short tons in 1989, which ranked the State seventh nationally. About 90 percent of the coal was used for generating electricity. More than 80 percent of this utility coal was from mines in Kentucky, with the balance received largely from Indiana and West Virginia. Smaller amounts of coal were used in Kentucky to produce coke and as sources of heat for manufacturing plastics and similar products, inorganic chemicals, metals, and lime. Some of the lime was used in flue-gas desulfurization systems at coal-fired power plants in Kentucky and adjacent States.

Electricity generation in Kentucky is predominantly derived from coal. With a combined net summer generating capability of 13,839 megawatts (MW) at the beginning of 1989, the 21 coal-fired plants in the State held about 92 percent of Kentucky's total electricity generating capability. In 1989, the electricity generated from coal amounted to 66,214 gigawatthours, accounting for 94 percent of the total electricity generated in Kentucky. The two largest coal-fired power plants in the State ranked among the largest in the Nation. They are the 2,220-MW Paradise plant in Muhlenberg County, operated by the

Tennessee Valley Authority; and the 1,986-MW Ghent plant in Carroll County, operated by the Kentucky Utilities Company.

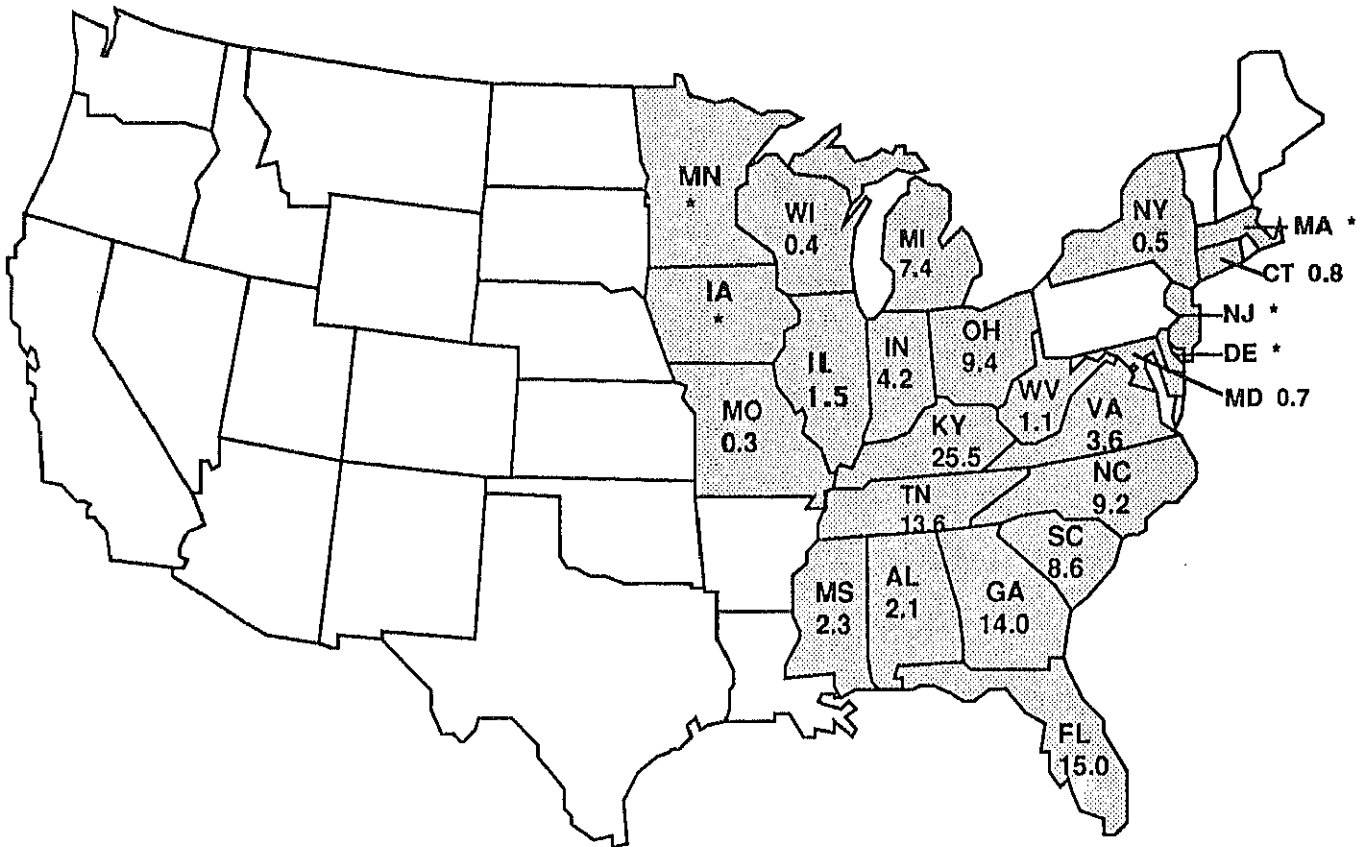
With its large coal reserves and established coal industry, Kentucky can be expected to continue as a major source of coal in the foreseeable future. Production is expected to rise to a new record of 167 million short tons in 1991, mostly to meet the demand from coal-fired power plants. In the longer outlook, coal development in the State could be hampered due to the depletion of many of the more accessible, thicker, and better-quality coalbeds. Furthermore, mining in new areas could be prohibited in places by land-use and technological restrictions. Consequently, the remaining coalbeds might not be comparable replacements, and less coal may be available. However, the impact of these constraints could be reduced by advances in the technology for mining thin coalbeds and for cleaning and burning coal more efficiently.

Sources

Energy Information Administration, *Coal Production* (various issues); *Quarterly Coal Report* (various issues); *Coal Distribution January-December 1989* (April 1990); *Weekly Coal Production* (April 6, 1990); *Cost and Quality of Fuels for Electric Utility Plants 1989* (July 1990); *Inventory of Power Plants in the United States 1988* (August 1989); *Electric Power Annual* (various issues); Kentucky Governor's Office for Coal and Energy Policy, and the Kentucky Coal Association, *Kentucky Coal Facts: 1989-90 Pocket Guide*; "Kentucky's Coal Supply," by Jim Cobb, *IMMR Highlights*, Institute for Mining and Minerals Research, University of Kentucky, Vol. 9, No. 1, 1990, pp. 1, 3, and 4; U.S. Department of the Interior, Minerals Management Service, *Mineral Revenues; The 1988 Report on Receipts from Federal and Indian Leases*; U.S. Bureau of Mines, *State Mineral Summaries 1990*; "Longwall Census '90," *Coal*, Vol. 95, No. 2 (February 1990), pp. 36-47.

Distribution of Kentucky Coal to Power Plants, 1989 (Million Short Tons)

Total: 120.4



* Less than 0.1 million short tons

Source: Energy Information Administration, *Weekly Coal Production*,
DOE/EIA-0218(90-14) (Washington, DC, April 6, 1990).

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